Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A composite insulation material comprising:

a syntactic foam component and

a plurality of aerogel inserts embedded within said syntactic foam component, wherein said composite insulation material has opposed first and second surfaces and comprises a plurality of incisions and/or indentations formed into the first surface and/or the second surface, or extending between the first and second surfaces.

2. (original) The composite insulation material according to claim 1, wherein said syntactic foam component comprises an elastomeric matrix and a filler dispersed substantially throughout said elastomeric matrix.

3. (original) The composite insulation material according to claim 2, wherein said elastomeric matrix is selected from the group consisting of silicone and rubber.

4. (original) The composite insulation material according to claim 2, wherein said elastomeric matrix further comprises a plasticizer.

5. (original) The composite insulation material according to claim 4, wherein said plasticizer is present in an amount by volume of between about 5 and about 50 percent.

6. (original) The composite insulation material according to claim 4, wherein said plasticizer is polymethylsiloxane.

7. (original) The composite insulation material according to claim 2, wherein said filler comprises a plurality of microspheres.

8. (original) The composite insulation material according to claim 7, wherein said plurality of microspheres are present in an amount by volume of between about 10 and about 70 percent.

9. (original) The composite insulation material according to claim 7, wherein said microspheres are selected from the group consisting of glass microspheres, plastic microspheres, and a combination of glass and plastic microspheres.

10. (original) The composite insulation material according to claim 7, wherein said microspheres have a diameter of between about 20 and about 5,000 micrometers.

11. (original) The composite insulation material according to claim 1, wherein said syntactic foam component comprises an elastomeric matrix and a plurality of microspheres, wherein said elastomeric matrix comprises silicone and a plasticizer.

12. (original) The composite insulation material according to claim 1, wherein said plurality of aerogel inserts are partially embedded within said syntactic foam component.

13. (original) The composite insulation material according to claim 1, wherein said plurality of aerogel inserts are fully embedded within said syntactic foam component.

14. (original) The composite insulation material according to claim 1, wherein each of said aerogel inserts comprises synthetic amorphous silica.

15. (original) The composite insulation material according to claim 14, wherein said plurality of aerogel inserts are present in an amount by volume of between about 40 percent and about 90 percent.

16. (original) The composite insulation material according to claim 14, wherein said plurality of aerogel inserts are non-uniformly embedded within said syntactic foam component.

17. (original) The composite insulation material according to claim 14, wherein said plurality of aerogel inserts are uniformly embedded within said syntactic foam component.

18. (currently amended) The composite insulation material according to claim 1 ~~wherein said composite insulation material has opposed first and second surfaces, the composite insulation material~~ further comprising:

a first laminate layer substantially covering the first surface of said composite insulation material; or

a second laminate layer substantially covering the opposed second surface of said composite insulation material; or

~~both the first and the second laminate layers~~ a first laminate layer substantially covering the first surface of said composite insulation material and a second laminate layer substantially covering the opposed second surface of said composite insulation material.

19. (original) The composite insulation material according to claim 18, wherein said first and second laminate layers are the same or different and each comprises a nylon/spandex laminating compound, a lycra laminating compound, or a neoprene rubber laminating compound.

20. (currently amended) The composite insulation material according to claim 18 further comprising:

a first adhesive layer between said first laminate layer and said first surface of said composite insulation material; or

a second adhesive layer between said second laminate layer and said second surface of said composite insulation material; or

~~both the first and second adhesive layers~~ a first adhesive layer between said first laminate layer and said first surface of said composite insulation material and a second adhesive layer between said second laminate layer and said second surface of said composite insulation material.

21. (original) The composite insulation material according to claim 20, wherein said first and second adhesive layers are the same or different and each comprises a silicone-based adhesive.

22. (original) The composite insulation material according to claim 20, wherein said first and second adhesive layers each has a thickness of between about 200 and about 500 micrometers.

23. (original) The composite insulation material according to claim 18, wherein each of said first and second laminate layers has a thickness of between about 200 and about 500 micrometers.

24. (original) The composite insulation material according to claim 18 further comprising a fluid impervious membrane between said first surface and said first laminate layer.

25. (original) The composite insulation material according to claim 18 further comprising a fluid impervious membrane between said second surface and said second laminate layer.

26. (original) The composite insulation material according to claim 18, wherein said syntactic foam component has a thickness of between about 2 and about 25 millimeters.

27. (original) The composite insulation material according to claim 18, wherein said composite insulation material has a thickness of between about 2 and about 25 millimeters.

28. (original) The composite insulation material according to claim 1, wherein said composite insulation material has a thickness of between about 2 and about 25 millimeters.

29. (canceled)

30. (currently amended) The composite insulation material according to ~~claim 29~~ claim 1, wherein said plurality of incisions and/or indentations are at a depth of between about 10 and about 100 percent of the thickness of said composite insulation material.

31. (currently amended) The composite insulation material according to ~~claim 29~~ claim 1, wherein each of said plurality of incisions and/or indentations has a width of not greater than about 25 times the thickness of said composite insulation material.

32. (currently amended) The composite insulation material according to ~~claim 29~~ claim 1, wherein said plurality of incisions and/or indentations comprise incisions and/or indentations of non-uniform depth and width.

33. (currently amended) The composite insulation material according to ~~claim 29~~ claim 1, wherein said plurality of incisions and/or indentations are arranged in a uniform array.

34. (currently amended) The composite insulation material according to ~~claim 29~~ claim 1, wherein said plurality of incisions and/or indentations are arranged in a non-uniform array.

35. (currently amended) The composite insulation material according to ~~claim 29~~ claim 1, wherein each of said plurality of incisions and/or indentations has the same shape.

36. (currently amended) The composite insulation material according to ~~claim 29~~ claim 1, wherein said plurality of incisions and/or indentations comprise at least two different shapes of incisions and/or indentations.

37. (original) The composite insulation material according to claim 1, wherein said composite insulation material has a thermal conductivity of between about 10 and about 50 mW/m-K at a depth of up to about 350 feet of sea water.

38. (original) The composite insulation material according to claim 1, wherein said composite insulation material has a drapeability parameter of between about 0.07 and about 3.36 g-m, as measured using Federal Test Method Standard Number 191A Method 5206.

39. (original) The composite insulation material according to claim 1, wherein said composite insulation material has a tensile strength of between about 0.07 and about 2.20 MPa, as measured using ASTM D412-98a.

40. (original) The composite insulation material according to claim 1, wherein said composite insulation material has a tear strength of between about 0.36 and about 17.60 kN/M, as measured using ASTM D624-00.

41. (original) The composite insulation material according to claim 1, wherein said composite insulation material has an elastic modulus of between about 0.01 and about 0.22 MPa at an elongation of about 50 percent, between about 0.02 and about 0.25 MPa at about 100 percent elongation, or between about 0.02 and about 0.29 MPa at about 200 percent elongation, as measured using ASTM D412-98a.

42. (original) The composite insulation material according to claim 1, wherein said composite insulation material has a specific weight of between about 0.25 and about 0.70.

43. (original) The composite insulation material according to claim 1, wherein said composite insulation material has a density of between about 250 kg/m^3 and about 750 kg/m^3.

44. (original) An article of clothing comprising the composite insulation material according to claim 1.

45. (original) The article of clothing according to claim 45, wherein said article is a dive suit.

46. (original) A pipeline comprising the composite insulation material according to claim 1.

Claims 47-59 (canceled)

60. (currently amended) A composite insulation material ~~produced according to the method of claim 47~~ having opposed first and second surfaces, and comprising a syntactic foam component and a plurality of aerogel inserts embedded within the syntactic foam component, wherein said composite insulation material has opposed first and second surfaces and comprises a plurality of incisions and/or indentations formed into the first surface and/or the second surface, or extending between the first and second surfaces, said composite insulation material being made according to a method comprising the following steps:

(i) providing a syntactic foam component,

embedding a plurality of aerogel inserts within the syntactic foam component to form the composite insulation material, and

introducing a plurality of incisions and/or indentations into the first and/or second surfaces of the composite insulation material; or

(ii) providing a syntactic foam component precursor,

inserting a plurality of aerogel inserts within the syntactic foam component precursor,

curing the syntactic foam component precursor to form the composite insulation material, and

introducing a plurality of incisions and/or indentations into the first and/or second surfaces of the composite insulation material.

Claims 61-68 (canceled)